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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/659,049	09/10/2003	Max Andrew Little	7220-X03-054	3260

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EXAMINER

SELLERS, DANIEL R

ART UNIT PAPER NUMBER

2615

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/659,049	LITTLE, MAX ANDREW	
	Examiner	Art Unit	
	Daniel R. Sellers	2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 December 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 14-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 14-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in the United Kingdom on 10th of March, 2001. It is noted, however, that applicant has not filed a certified copy of the 0105975.7 application as required by 35 U.S.C. 119(b).
2. Acknowledgment is made of applicant's claim for foreign priority based on an application filed Internationally on 6th of March, 2002. It is noted, however, that applicant has not filed a certified copy of the PCT/GB02/00987 application as required by 35 U.S.C. 119(b).

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
4. Claims 1-7, and 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Werrbach, Cugnini et al., U.S. Pat. No. 4,602,381 (hereafter Cugnini), and in view of the admitted prior art.
5. Regarding claim 1, Werrbach teaches filtering the signals into high-pass filtered signals and into low frequency signals (Fig. 2, unit 1 and unit 2). The input capacitor and resistor form the high-pass filter and the low-pass filter in cascade with the high-pass filter (1) form a bandpass filter. Werrbach teaches the modifying of the low frequency signals, and Werrbach teaches the combining of the modified band-pass filtered signals with the high-pass signals (Fig. 2, unit 4). However Werrbach does not

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teach this specific method of amplifying and attenuating. Cugnini teaches compression, wherein the amplitude of an input signal is modified in this manner. Signals with amplitude $0 < a < a_1$ are amplified by a first constant, i.e. input signals below -30 dB are scaled linearly (Fig. 3, unit 32). Signals with amplitude $a_1 \leq a < a_2$ are amplified inversely proportional to a , i.e. input signals between -30 dB and -6 dB are amplified to be output at -6 dB. Signals with amplitude $a = a_2$ are unchanged, i.e. an input signal at -6 dB is output at -6 dB. Signals with amplitude $a_2 < a < a_3$ are attenuated inversely proportional to a , i.e. input signals between -6 dB and 0 dB are attenuated to be output at -6 dB. Finally, signals with amplitude $a = a_3$ are attenuated, i.e. an input signal at 0 dB is output at -6 dB (Fig. 3, unit 34). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Werrbach and Cugnini for the purpose of improving signal-to-noise ratios (Cugnini, Col. 4, line 49- Col. 5, line 29).

The combination of Werrbach and Cugnini teach a monophonic method, wherein there is no mention that left and right signals are used. The admitted prior art in the applicants' specification discloses seven design constraints (c1-c7) for proper processing of bass signals. In view of constraint c4, it would have been obvious to utilize a second instantiation of the combination outlined above for the purpose of modifying a second audio signal, i.e. one path is utilized for a left audio signal and another is utilized for a right audio signal. It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of

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Werrbach, Cugnini, and the admitted prior art for the purpose of modifying a plurality of channels.

6. Regarding claim 2, the further limitation of claim 1, it would have been obvious to use the largest absolute value chosen from the left and right signals in view of the admitted prior art. One of ordinary skill at the time of the invention would recognize that the balance of the left and right channels is preserved when one constant is used for amplification or attenuation of both signals.

7. Regarding claim 3, the further limitation of claim 2, see the preceding argument with respect to claim 1. Cugnini teaches a value of 12.5, which corresponds to trace 32 in figure 3.

8. Regarding claim 4, the further limitation of claim 1, see the preceding argument with respect to claim 3. Cugnini teaches a value of 0.5.

9. Regarding claim 5, the further limitation of claim 1, see the preceding argument with respect to claim 3. Cugnini teaches $a_1=0.04$ (Fig. 3, unit 34).

10. Regarding claim 6, the further limitation of claim 1, see the preceding argument with respect to claim 5. Cugnini teaches a value of 0.5.

11. Regarding claim 7, the further limitation of claim 1, see the preceding argument with respect to claim 5. Cugnini teaches a value of 1.

12. Regarding claim 15, the further limitation of claim 1, see the preceding argument with respect to claim 1. Werrbach teaches low bass frequency enhancement that employs a Sallen-Key lowpass filter to isolate the low frequencies. A Sallen-Key is a

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filter that has a Butterworth, or maximally flat, response. This type of filter is also an analog filter, which inherently is IIR (Col. 2, lines 32-34).

13. Regarding claim 16, see the preceding argument with respect to claim 2. The combination of Werrbach, Cugnini, and the admitted prior art teaches a method with these features.

14. Regarding claim 17, the further limitation of claim 16, the combination teaches completely attenuating frequencies below a certain predetermined frequency, i.e. the input filter as taught by Werrbach filters certain signals below a certain predetermined frequency as determined by the values of resistance and capacitance.

15. Regarding claim 18, the further limitation of claim 17, see the preceding argument with respect to claim 1. The combination teaches provides gain and attenuation to those values of input.

16. Claims 9-12 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Werrbach, Cugnini, and the admitted prior art as applied to claim 1 above, and further in view of Cool Edit.

17. Regarding claim 9, the further limitation of claim 1, see Cool Edit

... wherein the digital audio signal is in WAV format. (Page 17, WAV sections)

The preceding combination of Werrbach, Cugnini, and the admitted prior art do not teach WAV files, however Cool Edit teaches the use of several variations of WAV files. Cool Edit also teaches user configurable compressor settings (Pages 27-28, Compressor section), user editing controls for at least two channels (Page 22, Edit

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Left/Right section), user configurable filtering (Pages 34-35, Filtering section), and a mixing section (Page 27, Channel Mixer section). It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Werrbach, Cugnini, the admitted prior art, and Cool Edit for the purpose of editing WAV files.

18. Regarding claim 10, the further limitation of claim 1, see the preceding argument with respect to claim 1. Cool Edit teaches fully customizable filter parameters for band-pass filters.

19. Regarding claim 11, the further limitation of claim 1, see the preceding argument with respect to claim 1. Cool Edit teaches fully customizable filter parameters for high-pass filters.

20. Regarding claim 12, the further limitation of claim 1, see the preceding argument with respect to claim 1. Cool Edit teaches fully customizable limiter that can have the transfer function as taught by Cugnini.

21. Regarding claim 14, the further limitation of claim 1, see the preceding argument with respect to claim 1. Cool Edit teaches the use of digital filters.

22. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination Werrbach, Cugnini, and the admitted prior art as applied to claim 1 above, and further in view of Cool Edit 2000 webpage advertisement by Syntrillium Software Corp. (hereinafter Cool Edit 2000)..

23. Regarding claim 8, the further limitation of claim 1, see Cool Edit 2000

... wherein the digital audio signal is an MP3 encoded signal.

Cool Edit 2000 is the successor to Cool Edit 96, which is the successor of Cool Edit 95. The features pointed to in the manual of Cool Edit 95 have been added to and improved upon for this newer release of substantially the same program. The newer features described teach that Cool Edit 2000 reads and writes MP3 encoded signals. It would have been obvious for one of ordinary skill in the art to combine the teachings of Werrbach, Cugnini, the admitted prior art, and Cool Edit 2000 to provide playback of a popular audio encoding.

Response to Arguments

Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel R. Sellers whose telephone number is 571-272-7528. The examiner can normally be reached on Monday to Friday, 9am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on (571)272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



SINH TRAN
SUPERVISORY PATENT EXAMINER

DRS